

**REVIEW OF THE SUMMER OF  
1890-91.**

**A COLD SEASON.**

The Government Astronomer (Mr. C. Todd, C.M.G.) has prepared the following report:—  
The past five months (November to March) have been so remarkable, as regards the prevailing climatic conditions that a few notes respecting them may not be without interest. With one exception—viz., 1884-85—the summer just concluded has been the coolest since the Observatory records began in 1857. The average summer temperature for the last thirty-four years was 71·4°; the average summer temperature for 1884-85 was 68·1, or 3·3° below average; the average summer temperature for 1890-91 was 68·9°, or 2·5° below average. Throughout the whole of the five months (November to March) the thermometer in the shade only reached or exceeded 90° on twenty-six days (the average number being forty-three days); on only four days did the temperature exceed 100°, viz., once in January, once in February, and twice in March, the highest being 102·7° on February 8. In 1884-85 there were only twenty-one days over 90°, of which only two were over 100°, but the absolute maximum then was 104·8°. In the summer of 1884-85 the hottest months were January and February, when the mean temperature was 70·8°. This year February was the hottest month, with a mean temperature 70·8°, or 3° below the average. In 1884-85 the longest spell of heat was three days, viz., February 3, 4, and 5, when the temperature recorded was 101·2°, 103·8°, and 99·3°. This year the hottest spell was March 4, 5, 6, and 7, when the thermometer read 92°, 98·2°, 101·1°, and 102·6°, the minimum on the night of the 5th being only 78°, and on the night of the 6th 79·4°. We also had three consecutive hot days in the early part of November, and three on February 6, 7, and 8. March, 1885, was very cool, the temperature only exceeding 80° on eight days and 90° on two days. The mean for the month was 66°, or 3·9° lower than this year, and no less than 4·4° below the average of thirty-four years. March this year was more seasonable, the thermometer reading over 90° on six days, and the mean temperature being only 0·5° below the average. The most remarkable feature in the temperature this season was the extremely low value obtained for the mean of the daily highest readings, particularly in November, December, and January—the mean for November (73·8°) being the lowest on record, that for December (80·6°) one of the lowest, and January (81·7°) the lowest but two on record. In December, 1884, and February, 1885, the means then obtained are the lowest on record for those months. The cool days were not due to an excess of cloud, as the sky was more than usually clear, the mean amount of cloud being less than the average except in November. The nights also were for the most part very clear, especially in February, when the mean amount of sky covered at 9 p.m. was less than one-tenth (0·8), and in March when it

amount of sky covered at 9 p.m. was less than one-tenth (0·8), and in March, when it was 1·6.

Comparing the two seasons 1884-85 and 1890-91 as regards cloud we find that:—

In November, 1884, the mean cloud was below the average; in November, 1890, over the average.

In December, 1884, the mean cloud was over the average; in December, 1890, just about the average.

In January, 1885, the mean cloud was slightly under the average; in January, 1891, under the average.

In February, 1885, the mean cloud was considerably over the average; in February, 1891, very much under the average.

In March, 1885, the mean cloud was about or slightly over the average; in March, 1891, very much under the average.

In November, 1884, there were 6 clear days and 2 cloudy; in November, 1890, 4 clear, 3 cloudy.

In December, 1884, there were 2 clear days and 2 cloudy; in December, 1890, 6 clear, 4 cloudy.

In January, 1885, there were 10 clear days and 0 cloudy; in January, 1891, 8 clear, 1 cloudy.

In February, 1885, there were 7 clear days and 3 cloudy; in February, 1891, 15 clear, 0 cloudy.

In March, 1885, there were 6 clear days and 2 cloudy; in March, 1891, 17 clear, 1 cloudy.

Taking the whole of last summer we had fifty clear days, i.e., days on which at no time was there more than a tenth part of the sky clouded, and only nine completely overcast; whereas in 1884-85 there were only thirty-one days clear and nine overcast.

The weather during the two summers was very different. The late season throughout was very dry, except November, when, although there were not many wet days, the fall over the agricultural and settled portions of the colony was a plentiful one. After that the only rains were a good "general fall" on January 4 (heaviest in the Northern Areas), and a light and fairly general fall in the South on February 22 until the end of March, when there was a good steady rain over the whole colony, which has since been followed by further copious rains in the North and North-East. In 1884-85 the November rains were below the average, except on parts of the Flinders Range and Far Northern Areas. In December the weather was most unseasonable, stormy, and unsettled—a heavy cyclonic storm on the 13th doing great damage to ripe wheat crops—with copious rains generally south of the head of Spencer's Gulf. The rains in January were exceptionally heavy in the far interior and North-East (a remarkably heavy rain storm passing over the interior and across New South Wales between the 17th and 25th), and fairly abundant over the agricultural settlements. February rains were also good over nearly all the agricultural areas, but March rains were generally very light and scanty.

The following are the rains registered at Adelaide during the two summers under review compared with the average rainfall:—

	1884-85.	1890-91.	Av. 34 years.
	In.	In.	In.
November	0·368	2·196	1·021
December	0·357	0·199	0·893
January	0·234	0·542	0·837
February	0·207	0·981	0·652
March	0·331	0·566	1·069
Total	0·797	2·544	4·412

Total ... 2797 3581 4412

As regards pressure there was a marked contrast between the two seasons, the mean in the summer of 1884-85 being 29.987 inches, or only 0.063 inch above the average; whilst last summer it was 30.020 inches, or 0.036 above. In only one month (January) was the mean below the average, as will be seen by the following table:—

MEAN PRESSURE, 1884-85.

		Highest barom. re' ding	Lowest barom. re' ding
November	30.040	30.289	29.590
December	29.849	29.159	29.251
January	29.906	30.499	29.680
February	29.978	30.223	29.960
March	30.072	30.372	29.671
Average	29.987		

\* This is the lowest December mean on record.

† Only three means higher than this in January.

MEAN PRESSURE, 1880-91.

		Highest barom. re' ding	Lowest barom. re' ding
November	30.034	30.327	29.530
December	29.908	29.317	29.530
January	29.952	30.251	29.430
February	30.026	30.325	29.675
March	30.112	30.480	29.675
Average	30.020		

Only four higher means since 1857.

† Only four higher means since 1857.

AVERAGE PRESSURE FOR THIRTY-FOUR YEARS.

		Absolute highest barom. re' ding	Absolute lowest barom. re' ding
November	29.989	30.466	29.234
December	29.943	30.390	29.242
January	29.906	30.409	29.346
February	30.074	30.441	29.450
March	30.065	30.534	29.532
Average	29.984		

Briefly summing up we find that the summer of 1884-85 was very cool, rather cloudy and wet, with a mean barometric pressure about the average; and this year it was very cool, very clear and dry, with a high mean pressure. As to the prospects of the coming winter, it has been found from an examination of previous records that a "cool summer with a high barometer" is followed by a dry winter in eight out of eleven cases. The cool summer of 1884-85 was followed by very patchy rains in April and May, fair rains in June and July (best in southern parts), variable in August (light in north, better in south), average rain in September (except the south-east), dry October, November, and first half of December, then heavy rains. The winter pressure of 1885 was high, except during August. We must hope that the coming winter may prove an exception to the general rule. It has commenced well with good April rains in the north, where they have been general, and in some places very heavy; but very little has fallen in the south. It is not improbable that the past summer in the southern hemisphere has been cool generally or below the average, and we know that the winter in the northern hemisphere has been exceptionally severe. Such being the case we must look outside or to the condition of the sun for the cause.